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NOTES ON THE HABITS OF THE BREEDING
WATER BIRDS OF CHATHAM COUNTY,
GEORGIA

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With few exceptions, which are properly noted hereinafter, these notes are based wholly on my observations in Chatham County, Georgia, during the years 1909-12 and 1914-19, all inclusive. While it is believed that every water bird that breeds or has ever bred in the county is here recorded, only those species of which the eggs or young have been taken are included.

I deem it unnecessary to give in this introduction an extended account of the physical aspect of the county — although such would not be out of place here — since the reader will find in the accounts of many species numerous references to and descriptions of their habitat, which at least give some idea of the topography of portions of the county. As the reader will, of course, infer from some of these accounts, Chatham County is situated on the coast, being the northernmost coastal county in Georgia. Its breeding water-bird life is neither greatly varied as to species nor abundant as to individuals, and on account of the somewhat inaccessibility of the nesting haunts of most species, my knowledge of the life-histories of several species is not extensive. In most cases where my own notes are lacking, the deficiency has been supplied by Troup D. Perry of Savannah, a veteran oologist, to whom grateful acknowledgements are due. Mr. Perry and I have been inseparable companions in the field for seven years. To G. R. Rossignol, also of Savannah, I am under obligations for assistance rendered in securing breeding data, even though such assistance was given me indirectly. I have accompanied Mr. Rossignol on many expeditions to the breeding haunts of water birds, and many times have enjoyed his hospitality at his summer home on Wilmington island.

With this brief introduction the author presents to the reader the following more or less fragmentary notes

on the habits of the breeding water birds of Chatham County, Georgia.

Sterna antillarum — LEAST TERN.

This beautiful tern formerly nested in great abundance on the isolated beaches of the larger coast islands, but since 1891 no eggs have been taken in this county. On my visits to the islands during the past five years I have noted Least Terns in increasing numbers, but I have so far failed to secure evidence that they have reestablished themselves upon their former breeding grounds. The aspect of most of the beaches where they once nested remains unchanged, and hopes are entertained by local bird students that the birds will continue to increase and return to their old haunts. Commencing in late spring and continuing through the summer, numbers of these dainty birds may be seen fishing in the waters of Tybee inlet, but it is my belief that these individuals have merely wandered here from their breeding grounds to the north or south of this county. Long before I began the study of ornithology this species had ceased to breed in this locality, and for the following notes on its breeding habits I am indebted to T. D. Perry, whose experience with it is probably more extensive than that of any other Georgia ornithologist. From 1885 to 1890 large numbers of Least Terns annually resorted to the unfrequented beach of Warsaw island to rear their young. Although the birds were pretty evenly distributed over the entire five mile beach the most favored portion was near what is known as the "middle settlement," the name of which is explanatory of its location on the island. Mr. Perry tells me that at that time the beach at this point was wide; large areas of suitable shell-strewn sand being available for nesting sites. Most of the birds preferred that portion of the beach between high water mark and the sand dunes where numerous little tufts of vegetation were growing, affording protection for the young not only from the hot mid-day sun but from their numerous enemies as well. The eggs, usually three in number were deposited in a slight depression in the bare sand.

Very rarely was there noted any attempt at concealing the eggs, although occasionally a set would be found lying at the base of a tuft of beach grass and partially shaded by it. Laying usually commenced the first week in June, and by the 15th of that month the breeding season was at its height. The first of Mr. Perry's several visits annually to Warsaw island was never made before the 10th of June, and he informs me that a number of times he has secured fresh eggs late in the month of July. Although he never fully determined how many broods were raised in a season, he is of the opinion that there was only one. Most authors agree on the subject that unless there is a mishap to the eggs only one set is laid. Their ground color varies from pale grayish-green to light olivaceous-drab; often it is clear buffy. The spotting consists of dots and splashes of brown and lilac, and is usually well distributed over the egg, although it frequently tends to form a wreath around the large end. In size the eggs average 1.25 x .95. These birds are very solicitous for the safety of their eggs and young, greeting the intruder with shrill cries and much circling overhead. The young, like those of all beach nesting birds, are adepts at hiding, their color blending so perfectly with their surroundings that once the eye is taken off them great difficulty is had in locating them again, even though the observer marks the spot where they lie. As soon as they are able to fly, the young, in company with the adults, resort to the sounds and inlets, where, at this season of the year, they obtain an abundant supply of food.

Since this species lately began to increase in numbers in this county, I have been much interested in studying its feeding habits, and, while it continues as formerly to show a preference for the larger bodies of water, I often observe it singly or in pairs fishing in the numerous narrow creeks and rivers that thread their way along this coast. In Tybee inlet there are numerous shoals more or less disconnected but together covering a wide area. Many of these banks are uncovered at low tide, but a number are perpetually washed by the breakers rolling in from the

sea. These waters teem with small fish, besides numerous other forms of aquatic animal life, and upon these Least Terns feed to a large extent. When fishing in these shallows the birds usually fly close to the surface, and their movements when plunging into the water are quick, and, although their speed is slightly checked before they reach the surface, there is always much splashing.

About the time that Least Terns were nesting so abundantly on Warsaw island Mr. Perry also secured a few sets of eggs on Folly island, one of the numerous small hammocks having a beach, lying between Tybee and Warsaw islands. Until 1914, this island, which is not easily accessible, had not been visited by any local ornithologist in a number of years. With hopes of finding a few pairs of birds nesting there Mr. Perry and I visited it on May 17 of that year. However, its sharply sloping, semicircular beach was deserted, indeed the only wild life that we saw upon the entire island was a number of young Marsh Rabbits (*Sylvilagus palustris*).

Rynchops nigra — BLACK SKIMMER.

I have been unable to find the breeding grounds of this species on the coast of Chatham county. I doubt if it now breeds here, although it certainly did in considerable numbers fifteen or twenty years ago. T. D. Perry informs me that he has taken its eggs on Pelican Point, a key lying some distance off the south end of Tybee island. Unfortunately, Mr. Perry's note books containing data on this species have been misplaced, and he is unable to furnish me with dates. The tides now daily cover Pelican Point, resulting in its almost total disappearance. Of interest to me since the commencement of my study of ornithology on the coast of Georgia is the rapidly changing aspect of the sand banks that stretch in almost unbroken succession from the south end of Tybee island to Beach hammock in Warsaw sound, a distance of five miles. The periodical building up and disappearance of these banks undoubtedly accounts for the scarcity and non-breeding on this coast of this species, as it is unable to establish itself. Every summer I see a few

Skimmers on these banks, but they certainly do not breed there. Mr. Perry informs me that on Pelican Point the eggs were deposited upon the bare sand, the birds often breeding in close proximity, sometimes only two or three feet separating some "nests." The eggs were oftenest four in number, although frequently only three were laid, and occasionally sets of five were found. The ground color is creamy white; occasionally pure white, although this may be due to fading as this description is taken from specimens in the collection of Mr. Perry. The markings vary greatly, but the average egg is heavily spotted and blotched with blackish-brown; the spots are usually of irregular size, but always quite sharply defined, and are generally well distributed over the surface. The eggs average 1.75×1.35 in size.

These birds are very active during the early morning hours, feeding in the shallows of Tybee inlet as well as the larger rivers flowing into it. On May 17, 1914, T. D. Perry and I visited Folly island in quest of eggs of the Least Tern (*Sterna antillarum*), this trip being referred to in the account of that species. In order to gain access to this island it was necessary for us to either go outside and row a considerable distance through the breakers or await a high tide and laboriously push our boat through a long four foot wide canal that had been dug by trappers. We chose the latter route, and arriving at six p. m. of the 16th near the head of this canal we found that we would be compelled to camp upon a nearby small hammock until three a. m. when the canal would contain sufficient water to float a boat. After many difficulties we finally gained the river at the mouth of which lay our destination. The first gray streaks of dawn were just appearing in the east when the Skimmers made their appearance on the river, skimming the surface of the water often only a few feet from our boat. With the rising of the sun the birds deserted the river and retired to the outlying sand bars, there to stand and sun themselves for long periods. Although when resting they strictly confine themselves to the outer sand banks, at rare intervals I have seen individuals alight

on the mud flats closer inshore. This species apparently is becoming more and more uncommon on this coast, and a few years will no doubt see its total disappearance.

Anhinga anhinga — WATER-TURKEY.

Undoubtedly this curious bird once nested in considerable numbers in this county. The degree of its abundance now however can best be expressed by the term "sparingly and locally distributed." The extensive and splendid system of drainage inaugurated in the county some years ago has almost completely obliterated the former haunts of the Water-Turkey. As it is eminently a fresh water species, the draining of the ponds and swamps has forced it to seek nesting places elsewhere. T. D. Perry informs me that several years ago a friend of his secured several sets of eggs near Burroughs, a station on the Atlantic Coast Line railroad eleven miles southwest of Savannah. The birds were nesting in willows growing in an abandoned rice field reservoir.

The nest of the Water-Turkey is usually placed at low elevations but always over water. The eggs, usually four in number, are deposited the first week in May. According to my observations made at other points on the coast of Georgia, isolated nests are more often found, and even at localities where the species is abundant, the birds do not breed in large colonies, six or eight pairs being the most that I have observed nesting in close proximity. The nest is composed of sticks and is generally of large size, often measuring eighteen inches in diameter. The depression, however, is slight, sometimes imperceptible. Eggs, bluish white, covered with a rough chalky or calcareous deposit. They measure, on an average, 2.20x1.25.

These birds spend much of their time feeding in isolated ponds in which there is an abundant growth of aquatic vegetation. They prefer such bodies of water that are surrounded by heavy forests, although they frequent in considerable numbers the almost treeless fresh water marshes and abandoned rice fields if containing a good depth of water. I never saw one seek safety by skulking

in the dense vegetation. They depend, as far as my observations go, upon their swimming powers, or else take wing; usually the latter. They generally swim with the body wholly submerged, only the head and long neck showing above water. They are at all times very shy and retiring, and, occurring as they do only in the wildest and most thinly settled localities, are every year being pushed further away from this section by the draining and cultivation of their retreats.

Aix sponsa — WOOD DUCK.

No more fascinating scenes of natural beauty are to be found anywhere in the south than those presented to view at each turn as one travels up or down the sinuous course of the Ogeechee river from its mouth to the northwest corner of Chatham county. At many points along this stretch the river overflows its banks on both sides, the water reaching far back into the heavy deciduous forests, forming perpetually flooded swamps, most of which are impenetrable. Long stretches of the river are bordered by great trees drooping under their gray burden of tenuous moss, their foliage dipping into the black water which is rendered apparently darker by the shadows cast by the fringe of trees. At numerous points high, sandy bluffs, almost bare of vegetation take the place of the gloomy swamps. Here and there along the banks ancient stumps protrude, and in many places abandoned rice plantations stretch for miles along either side. The wooded portions of the swamps bordering this river are the home of the beautiful Wood Duck, which, while it formerly occurred in large numbers, is now so rare that it is only occasionally met with. I can say nothing of its habits during the breeding season from personal observation; furthermore I am not aware that its eggs have ever been taken in the county. However, T. D. Perry tells me that he has seen young at several localities, both in the nest and following the parents, although not recently, since the species is now nearly exterminated. He says the birds always built their nests in hollows in tall trees growing in or very close to

water, to which the old birds transported the young in their bills. He has seen young very early in April but a few days old. After they are hatched the adults lead them to nearby rice field reservoirs, where they remain until nearly grown when they return to the heavy timber along the streams.

Ixobrychus exilis — LEAST BITTERN.

The data that I have secured on the nesting habits of this species is very meager. It is a summer resident only, but on account of its retiring habits the times of its arrival and departure are not well known to me, and the fact that it breeds in the county has only recently been ascertained. In 1915 I accompanied G. R. Rossignol and Frank N. Irving on a visit to Ossabaw island. We landed on the north end in the late afternoon of May 10, and the following five days were devoted to a study of the bird life of the island. Our attention was directed particularly to the long established colony of herons in which a number of pairs of the now rare Egrets (*Casmerodius egretta*) and Snowy Egrets (*Egretta candidissima candidissima*) had found refuge. This rookery is in a large fresh water pond in which we spent two days full of interesting experiences.

Situated in the middle northern portion of Ossabaw island, a coast island nine miles long and five miles wide at its widest point, this pond, created by the flow from an artesian well, annually furnishes a winter home for wild fowl and a summer home for many species of water birds, besides those land birds partial to such an environment. Its area covers very nearly two acres, although about one-third of it apparently is unsuitable as a nesting environment for any species of bird except Red-winged Blackbirds (*Agelaius phoeniceus phoeniceus*) which were present everywhere in the pond. This portion is the marginal strip and is about fifty feet wide. Beginning at the edge of the pond and extending toward its center for a distance of approximately one hundred and fifty feet there are dense growths of cat-tail flags, wampee and pond lilies, interspersed with small patches of saw grass. Each of these species of vegetation grows in separate and well de-

finned areas, although no one of them is restricted to any particular section of the pond. They together cover its entire area with the exception of a few open spaces of deep water in the center. As this is neared the vegetation lessens in density, and willows, none over ten feet in height, and seemingly insecurely rooted in the soft ooze, make their appearance. In summer these frail trees are taxed to their limit to support a burden of nests of six species of herons. The surface of all areas of open water is covered with a species of pond weed pea green in color. At first glance this greenish growth appears to be that which collects upon the surface of stagnant water, but such is not the case. An examination failed to disclose any outlet to this pond. The fact that the water is clear and nowhere stagnant would seem to indicate that there is an outlet which we overlooked; indeed, when it is understood that a large volume of water from the well daily flows into the pond, it can readily be seen that it is necessary that there be an outflow, since the water retains some of its original purity. Immediately surrounding the pond are narrow fringes of stunted oaks of several species, and a few rods further back begin coniferous and deciduous forests that extend for several miles in all directions.

Our first exploration of this pond was made afoot on May 11, the day after our arrival on the island, in a heavy downpour that continued throughout the day and night and well into the following day. We had as companions, in addition to the birds, swarms of Cotton-mouthed Moccasins and a number of alligators, the latter mostly of small size. We encountered no water over four feet in depth, and wading in the open pools, while extremely unpleasant in the continual downpour, was not attended by great difficulty or danger. Our progress through the dense masses of vegetation, however, was slow and difficult, for in their recesses lurked many poisonous moccasins for which it was necessary that we be ever on the alert. On the 14th, through the courtesy of Mr. Sasser, the overseer of the island, we were enabled to avoid a second exploration on foot. Mr. Sasser kindly allowed us the use of his horse

and wagon to haul a light skiff to the pond, a distance of four miles from his house, at which we were staying. Launching the boat through the dense vegetation, a distance of over one hundred feet, was exceedingly difficult. The weather however was fine, and every minute of our stay in the pond was used to advantage. Although our second visit was unproductive of finding nests of species additional to those noted on the 11th, we did secure much further data on the nesting habits of the herons, some of which will be given in the sketches of the various species.

Two nests of the Least Bittern were found in this pond; one on the 11th, containing three heavily incubated eggs, and one on the 14th containing one egg. These nests were built in cat-tail flags and were composed of the dead stalks and blades of the different species of vegetation growing in the pond. They were placed only a few inches above the surface of the water and were well concealed, the tops of the flags rising two or three feet above the water. They were simply shallow platforms, apparently hastily constructed, the depression being barely noticeable. The set of three eggs collected is now in the collection of G. R. Rossignol. They are pale bluish white and average 1.25x.90. I believe that Least Bitterns breed in considerable numbers in this pond, but on account of the rank growth of vegetation covering nearly its entire area I was unable to explore it thoroughly and only the two nests mentioned above were found. I very rarely caught sight of one of the birds, so successful were they in hiding in the tall reeds.

Only a small percentage of the Least Bitterns that migrate along this coast remain in this section to breed. In both spring and autumn numbers of them frequent the salt marshes, becoming very active at night-fall. I doubt if any of the few pairs that remain here to breed ever nest in these marshes, but retire to the isolated fresh water ponds on the larger islands, where they are seldom molested.

Ardea herodias — GREAT BLUE HERON.

This picturesque bird is moderately common but

breeds only in the heavily forested areas of the larger coast islands. I am informed that it formerly bred in some numbers on Little Tybee island. The huge nests were placed near the extremity of the topmost limbs of giant short leaf pines and most of them were inaccessible. I am not aware of the present location of any heronies; indeed this species has long since ceased to breed in any numbers in this vicinity, therefore I am unable to offer much information concerning its nesting habits. With its behavior in autumn and winter upon its feeding grounds in the marshes and on the mud flats I am better acquainted, since it is much more abundant, or apparently so, during the above named seasons. I find it to be, as a rule, very shy and ever on the alert, which is really surprising, in view of the fact that it has so few enemies to contend with.

The greater portion of its food is secured from the salt marshes and the banks and shallows of the numerous creeks that wind their way through them. It is often seen in company of the smaller herons, particularly the Little Blue species. At such times it is the first to take wing at the approach of danger, and usually is far away before the intruder has arrived within a hundred yards of the spot where it stood. Upon stationing itself in a shallow creek to secure passing fish, if the latter are scarce the bird will remain motionless in one spot for a long period of time; apparently sluggish, and in an indifferent attitude; but when fish are plentiful, it becomes very active, spearing them right and left in rapid succession.

At sundown, or a little before, numbers of these stately birds can be seen slowly winging their way toward the forested portions of the islands, there to spend the night. They become much attached to these roosting places and will not desert them as long as their aspect remains unchanged and the birds are not greatly persecuted.

Casmerodius egretta — EGRET.

Of all the herons which nest in this county this species is the most beautiful and interesting, as it is the least abundant. The very few pairs that are left to breed un-

molested are confined to a fresh water pond on Ossabaw island, or at least apparently so, as I am not aware that it is known to nest at any other locality in Chatham county. The number of pairs which were breeding in this pond was not accurately determined during my visit to Ossabaw island in May, 1915. I saw ten or a dozen birds, and allowing for those which were temporarily absent from the rookery, I believe the number of pairs is very close to the former figure. The nests were built in willows, usually at a point where several stout limbs converged, and were bulky platforms of twigs loosely laid together. They were placed at heights ranging from two to ten feet above the surface of the water. All of the nests which I examined contained three eggs and the sets which were collected were about six days incubated. These herons were very shy, leaving their nests before I had approached to within two hundred feet of them, and would not return to them so long as anyone remained in the pond. However, no difficulty was experienced in determining which nests belonged to this species, as its eggs are unmistakable, being considerably larger than those of any other heron nesting in this pond. They are bluish green in color and measure 2.25x1.50.

Information secured from T. D. Perry, whose collecting activities extend over a period of nearly forty years, tends to convince me that this species never nested in this section in large colonies such as formerly occurred in Florida and along the Gulf coast. The absence of fresh water reservoirs, to which it was almost exclusively confined during the breeding season, evidently was the main cause of its comparative scarcity. Its numbers have been much reduced in recent years, and it is now threatened with extinction. Because of the rarity of this species and the next it has not been possible for me to determine the times of their arrival and departure. However, they are summer residents only.

Egretta candidissima candidissima — SNOWY EGRET.

Between eight and twelve pairs of these lovely birds

were nesting in the pond on Ossabaw island at the time of my visit there in May, 1915. Because of the similarity between their eggs and those of some other species of herons breeding there, it was not possible for me to accurately determine which nests belonged to these herons except by remaining concealed until the birds had settled on them. This required considerable patience, as, although they were not as wary as the larger Egrets, after I had entered the pond and frightened them from their nests, long waits in concealment were necessary before they would return. All of the nests that were identified were built in willows in which were placed many nests of the other species of herons which were breeding in the pond. They were simply rudely constructed platforms of twigs loosely arranged in a circular manner. The eggs were three in number, bluish green in color. They measure about 1.80x1.25.

I made a number of efforts to determine the character of the food of this species, but the data secured is meager, due chiefly to the difficulty in approaching the birds close enough for satisfactory observation. Besides this the very few pairs nesting in the pond distributed themselves, when feeding, over the large swampy and marshy areas on the island, and were rarely encountered. The limited notes secured lead me to believe that a considerable percentage of their food consists of crawfish, while individuals were detected on several occasions catching small fish swimming near the banks of the small creeks.

This species does not breed at any other locality, although suitable ponds exist on some of the other large and isolated islands. During the past ten years this species has rapidly decreased in numbers and it is now rare in this county.

[TO BE CONTINUED]